

CLAIMS

What is claimed is:

1 1. A method comprising:
2 receiving a plurality of constituting elements of a data structure;
3 determining occurrence frequency of each unique constituting element in said
4 data structure;
5 assigning a cookie representation to each of said unique constituting
6 elements based at least in part on the occurrence frequencies of said unique
7 constituting elements; and
8 transmitting said data structure implicitly in a substantively equivalent form
9 that allows a receiver of said data structure in said substantively equivalent form to
10 be able to reconstitute the data structure using said occurrence frequency based
11 cookie representations.

1 2. The method of claim 1, wherein said determining and assigning comprises
2 assigning an initial cookie representation to each unique constituting element as the
3 constituting elements are received, and tracking occurrence frequencies of the
4 unique constituting elements, and upon receipt of all constituting elements of the
5 data structure, re-assigning a final cookie representation for each of the unique
6 constituting elements based on the occurrence frequencies of the unique
7 constituting elements.

1 3. The method of claim 2, wherein the method further comprises ordering said
2 unique constituting elements based on their occurrence frequencies.

1 4. The method of claim 2, wherein the method further comprises storing said
2 constituting elements of the data structure as they are received, using said initial
3 cookie representations, and subsequently replacing the stored initial cookie
4 representations with the final cookie representations, and said transmitting
5 comprises transmitting said constituting elements of said data structure using said
6 final cookie representations.

1 5. The method of claim 4, wherein said transmitting further comprises
2 transmitting a list of said unique constituting elements in the order of their
3 occurrence frequencies to allow the receiver to infer the corresponding final cookie
4 representations of the unique constituting elements.

1 6. The method of claim 1, wherein the cookie representations are numeric in
2 form, with the cookie representations of the 128 most frequently occurred unique
3 constituting elements having a size of one byte each, and the cookie
4 representations of the next 32,640 most frequently occurred unique constituting
5 elements having a size of two bytes each.

1 7. The method of claim 1, wherein said data structure is an XML data structure,
2 and said constituting elements comprise tag names, attribute names and attribute
3 values.

1 8. A method comprising:
2 receiving a plurality of unique constituting elements of a data structure
3 transmitted in a pre-determined manner;

4 inferring a plurality of corresponding cookie representations for the received
5 unique constituting elements in accordance with their manner of transmissions
6 under the pre-determined manner of transmission; and
7 receiving the constituting elements of the data structure in a representative
8 form.

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1 9. The method of claim 8, wherein said inferring comprises inferring the plurality
2 of corresponding cookie representations based on the order the unique constituting
3 elements are transmitted.

1 10. The method of claim 9, wherein said inferring comprises inferring a unique
2 one-byte numeric representation for each of the first 128 unique constituting
3 elements transmitted, and a unique two-bytes representation for each of the next
4 32,460 unique constituting elements transmitted.

1 11. The method of claim 8, wherein the method further comprises reconstituting
2 the constituting elements of the data structure, received in said representative form,
3 based on the inferred cookie representations.

1 12. The method of claim 8, wherein said data structure is an XML data structure,
2 and said constituting elements comprises tag names, attribute names and attribute
3 values.

1 13. An apparatus comprising:

2 storage medium having stored therein a plurality of programming instructions
3 designed to receive a plurality of constituting elements of a data structure,
4 determine occurrence frequency of each unique constituting element in said data
5 structure, assign a cookie representation to each of said unique constituting
6 elements based at least in part on the occurrence frequencies of said unique
7 constituting elements, and transmit said data structure implicitly in a substantively
8 equivalent form that allows a receiver of said data structure in said substantively
9 equivalent form to be able to reconstitute the data structure using said occurrence
10 frequency based cookie representations; and

11 at least one processor coupled to the storage medium to execute the
12 programming instructions.

1 14. The apparatus of claim 13, wherein said programming instructions are
2 designed to perform said determining and assigning by assigning an initial cookie
3 representation to each unique constituting element as the constituting elements are
4 received, and tracking occurrence frequencies of the unique constituting elements,
5 and upon receipt of all constituting elements of the data structure, re-assigning a
6 final cookie representation for each of the unique constituting elements based on
7 the occurrence frequencies of the unique constituting elements.

1 15. The apparatus of claim 14, wherein the programming instructions are further
2 designed to order said unique constituting elements based on their occurrence
3 frequencies.

1 16. The apparatus of claim 14, wherein the programming instructions are further
2 designed to store said constituting elements of the data structure as they are

3 received, using said initial cookie representations, and subsequently replace the
4 stored initial cookie representations with the final cookie representations, and said
5 programming instructions perform said transmitting by transmitting said constituting
6 elements of said data structure using said final cookie representations.

1 17. The apparatus of claim 16, wherein said programming instructions are further
2 designed to transmit a list of said unique constituting elements in the order of their
3 occurrence frequencies to allow the receiver to infer the corresponding final cookie
4 representations of the unique constituting elements.

1 18. The apparatus of claim 13, wherein the programming instructions are deigned
2 to employ cookie representations in numeric form, with the cookie representations of
3 the 128 most frequently occurred unique constituting elements having a size of one
4 byte each, and the cookie representations of the next 32,640 most frequently
5 occurred unique constituting elements having a size of two bytes each.

1 19. The apparatus of claim 13, wherein said programming instructions are
2 designed to perform said receive, determine, assign and transmit for an XML data
3 structure, said constituting elements comprising tag names, attribute names and
4 attribute values.

1 20. The apparatus of claim 13, wherein said apparatus is a selected one of a
2 wireless mobile phone, a palm sized personal digital assistant, a notebook sized
3 computer, a desktop computer, a set top box and a server.

1 21. An apparatus comprising:

2 storage medium having stored therein a plurality of programming instructions
3 designed to receive a plurality of unique constituting elements of a data structure
4 transmitted in a pre-determined manner, infer a plurality of corresponding cookie
5 representations for the received unique constituting elements in accordance with
6 their manner of transmissions under the pre-determined manner of transmission,
7 and receive the constituting elements of the data structure in a representative form;
8 and
9 at least one processor coupled to the storage medium to execute the
10 programming instructions.

1 22. The apparatus of claim 21, wherein said programming instructions are
2 designed to infer the plurality of corresponding cookie representations based on the
3 order the unique constituting elements are transmitted.

1 23. The apparatus of claim 22, wherein said programming instructions are
2 designed to infer a unique one-byte numeric representation for each of the first 128
3 unique constituting elements transmitted, and a unique two-bytes representation for
4 each of the next 32,460 unique constituting elements transmitted.

1 24. The apparatus of claim 21, wherein said programming instructions are further
2 designed to reconstitute the constituting elements of the data structure, received in
3 said representative form, based on the inferred cookie representations.

1 25. The apparatus of claim 21, wherein said programming instructions are
2 designed to perform said receive, infer, receive, and re-constitute for a XML data

1 26. The apparatus of claim 21, wherein said apparatus is a selected one of a
2 wireless mobile phone, a palm sized personal digital assistant, a notebook sized
3 computer, a desktop computer, a set top box and a server.

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